REMARKS

In response to the Office Action mailed April 24, 2003, Applicants respectfully request reconsideration. To further the prosecution of this Application, Applicants submit the following remarks, have amended certain claims and have added new claims. The claims as now presented are believed to be in allowable condition.

Claims 1-24 were pending in this application. By this Amendment, claims 25-31 have been added. Accordingly, claims 1-31 are now pending in this application. Claims 1, 5, 9, 11, 15, 19 and 21 are independent claims.

Rejections under §102 and §103

Claims 1, 4, 5, 8, 9, 11, 14, 15, 18, 19, 21 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,086,618 (Al-Hilali et al.) in view of U.S. Patent No. 6,539,022 (Virgile). Claims 2, 6, 10, 12, 16, 20 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Al-Hilali et al. in view of Virgile, and in further view of U.S. Patent No. 6,535,523 (Karmi et al.). Claims 3, 7, 13 17 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Al-Hilali et al. in view of Virgile, and in further view of U.S. Patent No. 5,926,463 (Ahearn et al.).

Applicants respectfully traverse each of these rejections and request reconsideration. The claims are in allowable condition.

Al-Hilali discloses a system that enables a purchaser of a server application to know whether hardware is sufficient to handle an anticipated load or if more hardware needs to be purchased (column 11, lines 23-26). The Al-Hilali system includes a general purpose computer device in the form of a conventional personal computer 20 (column 7, lines 3-9), and a remote computer 49 (column 7, lines 58-60 and Fig. 1). The personal computer 20 and the remote computer 49 operate in a network environment using logical connections such as a LAN 51 or a WAN 52 (column 7, line 58 through column 8, line 17). For the Al-Hilali system, a user 70 interacts with a client application 72 running on the personal computer 20 (column 8, lines 18-25 and Fig. 2). The way the user 70 interacts with the client application 72 in turn influences how the client application 72 interacts with a server application 76 over a communications

network 78 (column 8, lines 26-29). Eventually, the server application 76 activity translates into hardware usage such as CPU usage, memory usage, disk access and disk usage, network usage, etc. (column 8, lines 51-54). Some form of resource usage monitor 92 is used in conjunction with the server application and system hardware and software in order to measure the utilization or use of various system resources (column 9, lines 11-12). As a result, the total system usage may be computed, and this total system resource usage gives an indication as to how much CPU power is needed, necessary disk space, an amount of network bandwidth representing the anticipated load caused by interaction with the various client applications, etc. (column 11, lines 15-23).

Virgile discloses a subnetwork 100 connected to a router r100 (column 6, lines 44-46 and Fig. 3). The subnetwork 100 includes a bridge b100 connected to three network segments L100, L101 and L102 (column 6, lines 46-48 and Fig. 3). The network segments L100, L101 and L102 include hosts h101, ..., h119 (column 6, lines 48-56 and Fig. 3). Multicast packets received at the bridge b100 (from the router r100 or from a host h101-h119) are only retransmitted onto the network segments L100, L101 and L102 that contain destination hosts of the multicast packets (column 7, lines 24-29). Stated another way, the bridge b100 refrains from retransmitting multicast packets onto those attached network segments L100, L101 and L102 that are devoid of destination hosts of the multicast packets (column 7, lines 29-32). To that end, a processor 120 of the bridge b100 maintains a forwarding table with entries corresponding to multicast addresses (column 7, lines 32-33 and Figs. 1 and 4). The processor 120 also performs an "aging out" process (column 10, lines 16-17). Generally speaking, the forwarding table 200 is only accurate for a limited period of time (column 10, lines 17-18). This is due to a variety of reasons such as turning on and off of hosts, the reconfiguration (the changing of the interconnection of routers, bridges and hosts) of the network 100, the failing of a router, bridge, etc. (column 10, lines 18-22). Thus, the forwarding table 200 is presumed to be stale or inaccurate after a fixed period of time, e.g., every five minutes (column 10, lines 22-24). At each regular interval, the

processor 120 flushes or discards the forwarding table 200 in the memory 130 and begins constructing a new forwarding table 200 (column 10, lines 24-28 and Fig. 4).

Karmi discloses a system for sharing a resource among a set of users (column 2, lines 2-4). Each user has a usage rate selected from a set of variable rates, and each user's use of the resource is determined at least in part by the user's usage rate (column 2, lines 4-6). Each user also has a set of persistent vectors, each vector element corresponding to a rate among the set of available rates (column 2, lines 6-8). Selection of a user's usage rate from the set of available rates is based at least in part on one among the set of persistent vectors (column 2, lines 8-11). Fig. 4 of Karmi shows a system having a control unit 460 which receives information related to usage of resource 400 by users 420a-d (for example, current rate of use by one or more users, history of use by one or more users, reserve capacity available, predicted capacity, status of the resource, information relating to scheduled or unscheduled events that may affect resource capacity or status, etc.) (column 8, lines 40-47 and Fig. 4).

Ahearn discloses a method and apparatus for viewing the configuration of a computer network (column 3, lines 3-8). In order to collect information to determine the critical paths from one workstation to another, the Ahearn invention uses a tool called the "BA Traceroute tool," (column 20, lines 65-67). The router operates by sending out a packet to the destination address with a TTL set to 1 (column 21, lines 1-2). The first hop then sends back an ICMP error message indicating the packet could not be delivered because the TTL expired (column 21, lines 2-4). The packet is then resent with a TTL set to 2 (column 21, lines 4-5). The second hop then sends back an ICMP message indicating the TTL expired (column 21, lines 5-6). The process continues until the destination address is reached (column 21, lines 6-7).

Claims 1-4

Claim 1 is directed to a method for obtaining resource usage information from a node of a network. The method includes the step of generating, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data

element. The method further includes the steps of sending the data element to the node of the network, and receiving a signal from the node of the network. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network.

In order to establish a *prima facie* case of obviousness, the Office Action must meet three criteria.

> "First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."[1]

The Office Action, however, has not established a *prima facie* case of obviousness with respect to claim 1 because the cited do not teach or suggest all of the claim limitations.

In particular, Al-Hilali and Virgile, which were used to reject claim 135 U.S.C. §103(a), do not teach or suggest, either alone or in combination, a method for obtaining resource usage information from a node of a network, where the method includes a step of generating, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element, as recited in claim 1. Rather, Al-Hilali discloses a system that enables a purchaser of a server application to know whether hardware is sufficient to handle an anticipated load or if more hardware needs to be purchased (see column 11, lines 23-26 of Al-Hilali). Virgile discloses a processor 120 that, at regular intervals, discards a forwarding table 200, and begins constructing a new forwarding table 200 (see column 10, lines 24-28 and Fig. 4 of Virgile).

The Office Action states that Al-Hilali fails to disclose each of the steps recited in claim 1 including a step of generating, for a data element, a value for a parameter within the data element that will cause a node of a network to determine that the data element

---

[1] *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

is stale when the node of the network receives the data element (see the last sentence on page 2 of the Office Action). Applicants respectfully agree. In Al-Hilali, Applicants cannot find any mention of a method which involves generating of a value for a parameter within a data element that will cause a node of a network to determine that the data element is stale.

The Office Action then states that Virgile discloses a processor that performs an "aging out" process (see page 3, lines 1-3 of the Office Action). The Office Action further states on page 3 that:

> The forwarding table with the node is presumed to be stale or inaccurate after a fixed period of time, at each regular interval, the processor flushes or discards the forwarding table in the memory of the node and beings constructing a new table. The updated forwarding table is seen and received, where the signal entry provides an indication that the nodes(s) of the network has removed the data elements from the network. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Al-Hilali to include the teachings of Virgile in order to reduce network congestion and delay and conserves bandwidth for efficient utilization. *(sic).*

Applicants had some difficulty understanding the Office Action's contention here, but broadly believe this to be a contention that the teachings of Virgile in combination with the teachings of Al-Hilali would somehow result in the invention, as recited in claim 1. Applicants respectfully traverse such a contention. Even if the teachings of Al-Hilali and Virgile are combined, the result is still not the invention as recited in claim 1 as will now be explained in further detail.

In Virgile, at each regular interval, the processor 120 flushes or discards the forwarding table 200 in the memory 130 and begins constructing a new forwarding table 200 (see column 10, lines 24-28 and Fig. 4 of Virgile). Thus, one might try to argue that a device is capable of determining that the Virgile forwarding table 200 is a data element that is stale. However, even if one were to argue that the Virgile forwarding table 200 is a data element, there is still no teaching in either Al-Hilali or Virgile of any method for obtaining resource usage information from a node of a network where the method has a step of generating, for Virgile's forwarding table 200 (i.e., a data element),

a value for a parameter within the Virgile's forwarding table 200 that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element, as recited in claim 1. There is no parameter within Virgile's forwarding table 200 (see Fig. 4 of Virgile) that is capable of holding a value that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element, as recited in claim 1.

Additionally, claim 1 further recites steps of sending the data element to a node of a network, and receiving a signal from the node of the network, the signal including (i) an indication that the node of the network has removed the forwarding table 200 from the network, and (ii) resource usage information describing usage of resources within the node of the network. Al-Hilali and Virgile do not disclose sending a forwarding table 200 to a node of a network, and receiving a signal from the node of the network. Furthermore, it is unclear why anyone would want to send the Virgile forwarding table 200 to a node of a network. If anything, it is likely that such a task would unnecessarily increase overhead and create unnecessary network traffic.

Moreover, Karmi and Ahearn, which were cited against the dependent claims, do not teach or suggest how one could modify the Al-Hilali system to provide a method for obtaining resource usage information from a node of a network having the steps as recited in claim 1. Rather, Karmi discloses a system for sharing a resource among a set of users (see column 2, lines 2-4 of Karmi). Ahearn discloses a method and apparatus for viewing the configuration of a computer network (see column 3, lines 3-8 of Ahearn). Neither of these references discloses how one could or why one should generate, for Virgile's forwarding table 200 (i.e., a data element), a value for a parameter within the Virgile's forwarding table 200 that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element, as recited in claim 1.

For the reasons stated above, the invention as recited in claim 1 is not taught or suggested by the cited prior art, either alone or in combination. If the rejection of claim 1 is to be maintained, Applicants respectfully request that it be pointed out with particularity where Al-Hilali or Virgile teaches or suggests a method for obtaining

resource usage information from a node of a network having the particular steps recited in claim 1 (e.g., generating, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element).

For the reasons stated above, claim 1 patentably distinguishes over the cited prior art, and the rejection of claim 1 under 35 U.S.C. §103(a) should be withdrawn. Accordingly, claim 1 is in allowable condition.

Because claims 2-4 depend from and further limit claim 1, claims 2-4 are in allowable condition for at least the same reasons. Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art.

For example, dependent claim 2 further recites the step of receiving as including the step of acquiring, as the resource usage information, a history which identifies a combination of multiple resources that processed the data element as a non-stale data element. This feature is not taught or suggested by the cited prior art. The Office Action contends that Karmi discloses in Fig. 4 and respective portions of the specification that the control unit receives history that identifies a combination of multiple resources that processed a data element as a non-stale data element (see the middle paragraph of page 4 of the Office Action). Applicants respectfully traverse this contention. Karmi does not provide such a disclosure. Fig. 4 of Karmi shows a system having a control unit 460 which receives information related to usage of resource 400 by users 420a-d, e.g., history of use by one or more users (see column 8, lines 40-47 and Fig. 4 of Karmi). There is no mention of any data element processed by a combination of multiple resources as contended. If the rejection of claim 2 is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art provides such a disclosure.

Additionally, dependent claim 3 further recites the parameter within the data element as being a Time-To-Live field, the contents of which identify a limit to the number of remaining nodes which can process the data element within the network. Ahearn does teach the use of a Time-To-Live field but in a manner that is not suitable

for use by the elements of Al-Hilali or Virgile. For example, if one were to argue that the Virgile forwarding table 200 is a data element as recited in claims 1 and 3, why would one want to modify the Virgile forwarding table 200 to have a parameter, the contents of which identify a limit to the number of remaining nodes which can process the Virgile forwarding table 200 within the network. Where is there any disclosure of a number of remaining nodes processing the Virgile forwarding table 200? Such a modification does not make sense. Accordingly, if the rejection of claim 3 is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art provides such a disclosure.

Claims 5-8

Claim 5 is directed to an apparatus for obtaining resource usage information from a node of a network. The apparatus includes a network interface for connecting to the network, and a controller coupled to the network interface. The controller is configured to generate, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element. The controller is further configured to send the data element to the node of the network through the network interface, and receive a signal from the node of the network. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network.

The cited prior art does not disclose an apparatus for obtaining resource usage information from a node of a network where the apparatus has a controller configured generate, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element. In particular, as explained in connection with claim 1, Al-Hilali and Virgile do not teach or suggest, either alone or in combination, any device configured for such operation. Furthermore, Karmi and Ahearn, which were cited in rejections against the dependent claims, do not teach or suggest how one could

modify Al-Hilali and Virgile to provide a device configured for such operation. Accordingly, claim 5 patentably distinguishes over the cited prior art for at least the same reasons as claim 1, and the rejection of claim 5 under 35 U.S.C. §103(a) should be withdrawn. Thus, claim 5 is in allowable condition.

Because claims 6-8 depend from and further limit claim 5, claims 6-8 are in allowable condition for at least the same reasons. Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art. For example, dependent claim 6 further patentably distinguishes over the cited prior art for at least the same reasons as claim 2. Similarly, dependent claim 7 further patentably distinguishes over the cited prior art for at least the same reasons as claim 3.

Claims 9-10

Claim 9 is directed to a computer program product that includes a computer readable medium having instructions stored thereon for obtaining resource usage information from a node of a network. The instructions, when carried out by the computer, cause the computer to perform the step of generating, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element. The instructions further cause the computer to perform the steps of sending the data element to the node of the network, and receiving a signal from the node of the network. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network.

The cited prior art does not disclose a computer program product that includes a computer readable medium having instructions stored thereon for obtaining resource usage information from a node of a network, as recited in claim 9. In particular, as mentioned above in connection with claim 1, the cited references do not disclose any generating, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the

node of the network receives the data element. Accordingly, claim 9 patentably distinguishes over the cited prior art for at least the same reasons as claim 1, and the rejection of claim 9 under 35 U.S.C. §103(a) should be withdrawn. Thus, claim 9 is in allowable condition.

Because claim 10 depends from and further limits claim 9, claim 10 is in allowable condition for at least the same reasons.

Claims 11-14

Claim 11 is directed to a method for providing resource usage information. The method includes the steps of receiving a data element from a source computer of the network, determining that the data element is stale based on a parameter within the data element, and removing the data element from the network and sending a signal to the source computer of the network. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network.

As mentioned above in connection with claim 1, the cited references do not disclose a method for providing resource usage information having such steps. Accordingly, claim 11 patentably distinguishes over the cited prior art for at least the same reasons as claim 1, and the rejection of claim 11 under 35 U.S.C. §103(a) should be withdrawn. Thus, claim 11 is in allowable condition.

Because claims 12-14 depend from and further limit claim 11, claims 12-14 are in allowable condition for at least the same reasons. Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art. For example, dependent claim 12 further patentably distinguishes over the cited prior art for at least the same reasons as claim 2. Similarly, dependent claim 13 further patentably distinguishes over the cited prior art for at least the same reasons as claim 3. If the rejection of these claims is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art provides such disclosure.

Claims 15-19

Claim 15, to which a minor clarifying amendment has been made, is directed to a network node for providing resource usage information. The network node includes a network interface for connecting to a network, and a controller coupled to the network interface. The controller is configured to receive a data element from a source computer of the network through the network interface, determine that the data element is stale based on a parameter within the data element, and remove the data element from the network and send a signal to the source computer of the network through the network interface. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network.

As mentioned above in connection with claim 1, the cited references do not disclose a network node for providing resource usage information having such a controller. Accordingly, claim 15 patentably distinguishes over the cited prior art for at least the same reasons as claim 1, and the rejection of claim 15 under 35 U.S.C. §103(a) should be withdrawn. Thus, claim 15 is in allowable condition.

Because claims 16-19 depend from and further limit claim 15, claims 16-19 are in allowable condition for at least the same reasons. Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art. For example, dependent claim 16 further patentably distinguishes over the cited prior art for at least the same reasons as claim 2. Similarly, dependent claim 17 further patentably distinguishes over the cited prior art for at least the same reasons as claim 3. If the rejection of these claims is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art provides such disclosure.

Claims 19-20

Claim 19, to which a minor clarifying amendment has been made, is directed to a computer program product that includes a computer readable medium having instructions stored thereon for providing resource usage information. The instructions,

when carried out by the computer, cause the computer to perform the steps of receiving a data element from a source computer of the network, determining that the data element is stale based on a parameter within the data element, and removing the data element from the network and send a signal to the source computer of the network. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network.

The cited prior art does not disclose a computer program product that includes a computer readable medium having instructions stored thereon for providing resource usage information, as recited in claim 19. In particular, as mentioned above in connection with claim 1, the cited references do not disclose any receiving of a data element from a source computer of the network, and determining that the data element is stale based on a parameter within the data element. Accordingly, claim 19 patentably distinguishes over the cited prior art for at least the same reasons as claim 1, and the rejection of claim 19 under 35 U.S.C. §103(a) should be withdrawn. Therefore, claim 19 is in allowable condition.

Because claim 20 depends from and further limits claim 19, claim 20 is in allowable condition for at least the same reasons.

Claims 21-24

Claim 21 is directed to a system for obtaining resource usage information. The system includes a source computer which provides a data element, and a network node, coupled to the source computer. The network node forms at least a portion of a network with the source computer. The network node is configured to receive the data element from the source computer, determine that the data element is stale based on a parameter within the data element, and remove the data element from the network and send a signal to the source computer. The signal includes (i) an indication that the network node has removed the data element from the network, and (ii) resource usage information describing usage of resources within the network node.

As mentioned above in connection with claim 1, the cited references do not disclose a system having such a network node. Accordingly, claim 21 patentably distinguishes over the cited prior art for at least the same reasons as claim 1, and the rejection of claim 21 under 35 U.S.C. §103(a) should be withdrawn. As a result, claim 21 is in allowable condition.

Because claims 22-24 depend from and further limit claim 21, claims 22-24 are in allowable condition for at least the same reasons. Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art. For example, dependent claim 22 further patentably distinguishes over the cited prior art for at least the same reasons as claim 2. Similarly, dependent claim 23 further patentably distinguishes over the cited prior art for at least the same reasons as claim 3. If the rejection of these claims is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art provides such disclosure.

Newly Added Claims

Claims 25-31 have been added and are believed to be in allowable condition. Claim 25 depends from claim 1. Claim 26 depends from claim 5. Claim 27 depends from claim 9. Claim 28 depends from claim 11. Claim 29 depends from claim 15. Claim 30 depends from claim 19. Claim 31 depends from claim 21. Support for claims 25-31 is provided within the Specification, for example, on page 9, line 10 through page 11, line 28 and Figs. 1 and 2. No new matter has been added.

Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Amendment, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicants' Representative at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this Amendment, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,

David E. Huang, Esq.
Attorney for Applicant(s)
Registration No.: 39,229
CHAPIN & HUANG, L.L.C.
Westborough Office Park
1700 West Park Drive
Westborough, Massachusetts 01581
Telephone: (508) 366-9600
Facsimile: (508) 616-9805

Attorney Docket No.: CIS99-1714

Dated: July 24, 2003